The method of the present invention can increase the amount of current actually flowing through the EL layer upon application of a forward bias voltage to the EL element even if a pin hole is formed in the EL layer during formation of the layer due to dusts or the like and two layers sandwiching a light emitting layer short-circuit, because the method can raise the resistance of the defect portion where the short circuit takes place by changing the defect portion into the transmuted portion. Therefore the repairing method of the present invention can raise the luminance of emitted light with application of the same level of voltage despite the presence of the defect portion.

Having high resistance R_{SC}, the transmuted portion hardly allows a current to flow therein in contrast to the defect portion where there is always a flow of current to accelerate degradation of a part of the EL layer that surrounds the defect portion. Therefore, degradation is not accelerated in a part of the EL layer that surrounds the transmuted portion.

Embodiments of the present invention will be described below.

[Embodiment 1]

This embodiment gives a description on a case of applying a repairing method of the present invention to an active matrix light emitting device that has two thin film transistors (TFTs) in each pixel.

Fig. 3 is a circuit diagram of a pixel in the light emitting device to which the repairing method of the present invention is applied. Each pixel has a source signal line Si (i represents one of integers from 1 to x), a power supply line Vi (i represents one of integers from 1 to x), and a gate signal line Gj (j represents one of integers from 1 to y).

Each pixel also has a switching TFT 301, an EL driving TFT 302, an EL

element 303, and a capacitor 304.

The switching TFT 301 has a gate electrode connected to the gate signal line Gj. The switching TFT 301 has a source region and a drain region one of which is connected to the source signal line Si and the other of which is connected to a gate electrode of the EL driving TFT 302.

The EL driving TFT 302 has a source region connected to the power supply line Vi, and has a drain region connected to one of two electrodes of the EL element 303. The other electrode of the two electrodes of the EL element 303, namely, the electrode that is not connected to the drain region of the EL driving TFT 302, is connected to an opposite power supply 307.

Of the two electrodes of the EL element 303, the one that is connected to the drain region of the EL driving TFT 302 is called a pixel electrode while the other that is connected to the opposite power supply 307 is called an opposite electrode.

The capacitor 304 is formed between the gate electrode of the EL driving TFT 302 and the power supply line Vi.

Fig. 4A shows a pixel portion of the light emitting device which has a plurality of pixels shown in Fig. 3. A pixel portion 306 has source signal lines S1 to Sx, power supply lines V1 to Vx, and gate signal lines G1 to Gy. The plural pixels 305 form a matrix in the pixel portion 306.

Fig. 4B shows the operation of the TFTs and the level of voltage to be inputted to the power supply line Vi and to the opposite electrode in each pixel during repairing a defect portion of the EL element 303. When the defect portion of the EL element 303 is to be repaired, the switching TFT 301 and the EL driving TFT 302 in each pixel are both turned ON. While the voltage of the power supply line Vi is kept constant, the voltage of the opposite electrode is changed at given time intervals so that a given

reverse bias current flows into the EL element at given time intervals.

The defect portion of the EL element may be repaired at once in all of the pixels 305 of the pixel portion 306. Alternatively, the repair may be performed on one line of pixels at a time, or on one pixel at a time.

The method of the present invention can increase the amount of current actually flowing through the EL layer upon application of a forward bias voltage to the EL element even if a pin hole is formed in the EL layer during formation of the layer due to dusts or the like and two layers sandwiching a light emitting layer short-circuit, because the method can raise the resistance of the defect portion where the short circuit takes place by changing the defect portion into the transmuted portion. Therefore the repairing method of the present invention can raise the luminance of emitted light with application of the same level of voltage despite the presence of the defect portion.

Having high resistance R_{SC}, the transmuted portion hardly allows a current to flow therein in contrast to the defect portion where there is always a flow of current to accelerate degradation of a part of the EL layer that surrounds the defect portion. Therefore, degradation is not accelerated in a part of the EL layer that surrounds the transmuted portion.

Note that application of the repairing method of the present invention is not limited to light emitting devices structured as above. The present invention can be applied to light emitting devices of any structure.

[Embodiment 2]

This embodiment gives a description on a case of applying a repairing method of the present invention to an active matrix light emitting device that has three thin film transistors (TFTs) in each pixel.